

REMARKS

The present Amendment amends claims 1-3, 5-7, 9-13, 15, 17, 18, and 20, and leaves claims 4, 8, 14, 16, and 19 unchanged. Therefore, the present application has pending claims 1-20.

35 U.S.C. §102 Rejections

Claims 1-20 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 7,065,589 to Yamagami. This rejection is traversed for the following reasons. Applicants submit that the features of the present invention as now more clearly recited in claims 1-20 are not taught or suggested by Yamagami, whether taken individually or in combination any of the other references of record. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to the claims to more clearly describe features of the present invention. Specifically, amendments were made to the claims to more clearly recite that the present invention is directed to a remote copy system and method as recited, for example, in independent claims 1 and 11.

The present invention, as recited in claim 1, and as similarly recited in claim 11, provides remote copy system. The system includes a first storage unit, a second storage unit, and a third storage unit. The first storage unit system is connected to a computer and has a first storage area and a first controller, where the first storage area includes a first disk device. The second storage unit system has a second storage area and a second controller, where the second storage area includes a second disk device. The third storage unit system is connected to the first storage unit system and the second storage unit system, and has a third storage area and a third controller. According to the present invention, the first controller responds to a

write request received from the computer to transmit to the third storage unit system a journal including write data received from the computer and address information indicative of a position in the second storage unit system at which the write data is to be written. The first controller also stores the write data in the first disk device. Furthermore, the first controller returns a response to the write request to the computer after transmitting the journal. Also according to the present invention, the second controller receives first control information issued by the first controller and including a storage position of the journal used when the second storage unit system acquires the journal. The second controller also acquires the journal from the third storage unit system based on the first control information. Furthermore, the second controller stores the write data in the second disk device based on the address information included in the journal. The prior art does not disclose all of these features.

The above described features of the present invention, as now more clearly recited in the claims, are not taught or suggested by any of the references of record, particularly Yamagami, whether taken individually or in combination with any of the other references of record.

Yamagami teaches a three data center remote copy system with journaling. However, there is no teaching or suggestion in Yamagami of the remote copy system and method as recited in claims 1 and 11 of the present invention.

Yamagami discloses a remote copy system that includes a first storage system, a second storage system and a third storage system. The first storage system includes a first storage controller and a first data volume. The first storage controller is configured to control data access requests to the first data volume. The first storage system is configured to store write data in the first data volume upon

receiving a write request from a first host associated with the first storage system and generate a journal including control data and journal data. The second storage system includes a journal volume and configured to receive and store the journal generated by the first storage system in the journal volume. The third storage system includes a second data volume and configured to receive the journal from the second storage system and store the journal data of the journal to the second storage system according to information provided in the control data.

One feature of the present invention, as recited in claim 1, and as similarly recited in claim 11, includes where the first controller responds to a write request received from the computer to transmit to the third storage unit system a journal including write data received from the computer and address information indicative of a position in the second storage unit system at which the write data is to be written. Yamagami does not disclose this feature.

For example, as shown in Fig. 2, and as described in the accompanying text at column 5, line 63 to column 6, lines 46, Yamagami discloses a JVOL 112 that is configured to store a journal or journal information used in performing a remote copy. The journal includes a pair of journal data and its control data. As shown in Fig. 2, the control data includes an address 212 that provides an offset address in the PVOL, from which the write data is written. Furthermore, the control data includes a journal offset (JOFS) 217 that provides the offset address in the journal volume from which the journal data is stored. Neither the address 212 nor the JOFS 217 included in the journal of Yamagami is the same as the address information included in the journal of the present invention, where the address information of the present invention indicates a position in the second storage unit system at which the write data is to be written.

Another feature of the present invention, as recited in claim 1, and as similarly recited in claim 11, includes where the second controller stores the write data in the second disk device based on the address information included in the journal.

Yamagami does not disclose this feature.

For example, as succinctly described in claim 1 of Yamagami, Yamagami teaches where the journal includes write data and a sequence number indicating write ordering to the first data volume, and where the write data to be stored in the third data volume is generated according to the write order provided by the sequence number of the journal (see *a/so*, column 10, line 66 to column 11, line 22 of Yamagami). This is quite different from the present invention, where the journal includes write data and address information, and where the write data is stored in the second disk device, based on the address information included in the journal.

Therefore, Yamagami fails to teach or suggest "wherein said first controller: responds to a write request received from said computer to transmit to said third storage unit system a journal including write data received from said computer and address information indicative of a position in said second storage unit system at which said write data is to be written" as recited in claim 1, and as similarly recited in claim 11.

Furthermore, Yamagami fails to teach or suggest where the second controller "stores said write data in said second disk device based on the address information included in said journal" as recited in claim 1, and as similarly recited in claim 11.

Therefore, Yamagami does not teach or suggest the features of the present invention, as recited in claims 1-20. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §102(e) rejection of claims 1-20 as being anticipated by Yamagami are respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 1-20.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 1-20.

In view of the foregoing amendments and remarks, Applicants submit that claims 1-20 are in condition for allowance. Accordingly, early allowance of claims 1-20 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (referencing Attorney Docket No. 500.43155X00).

Respectfully submitted,

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